

208220 9607660

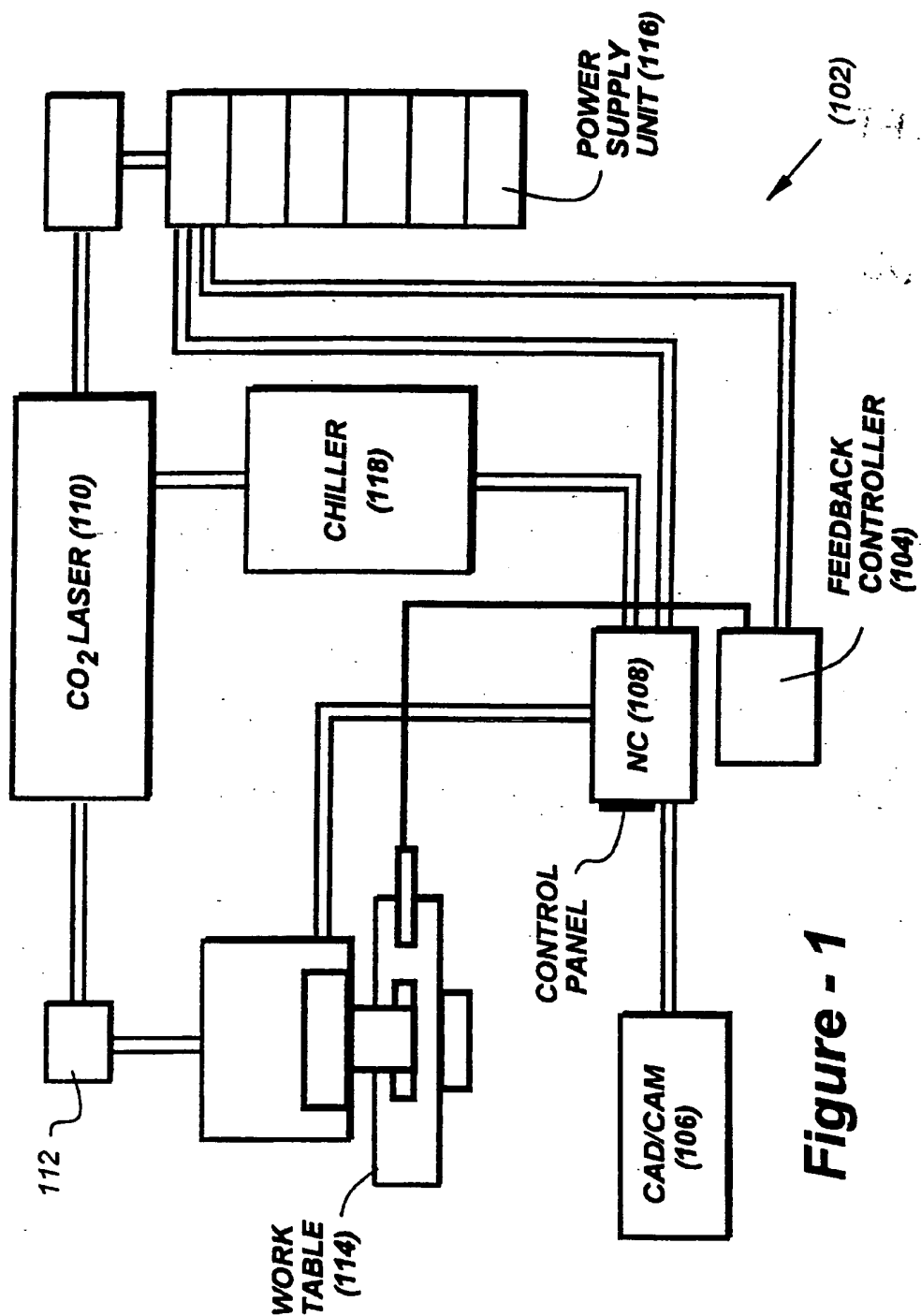
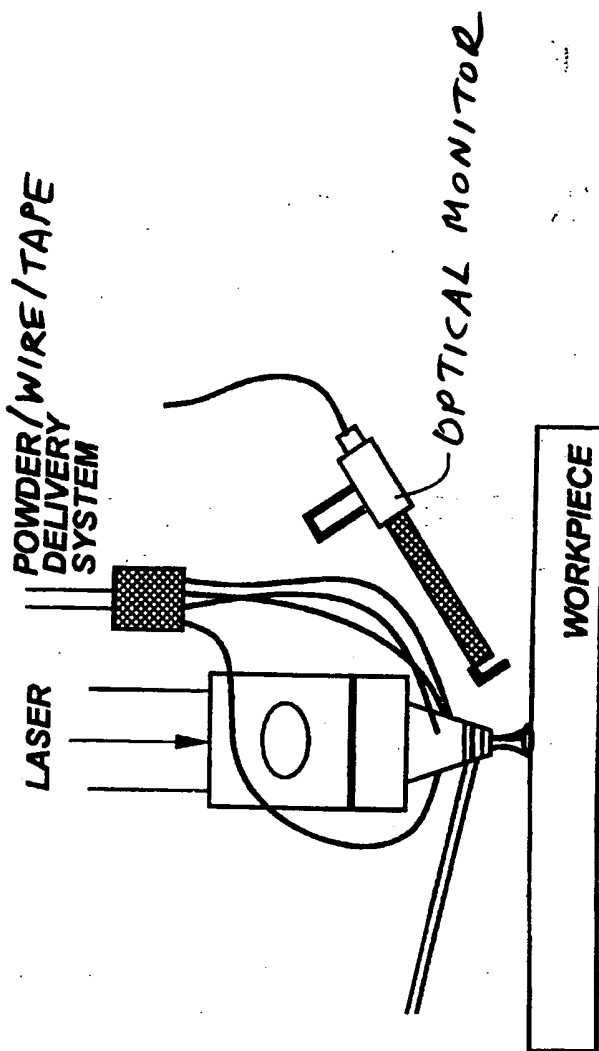


Figure - 1

208220" 950/1660

**Figure - 2**



2008220" 96027660

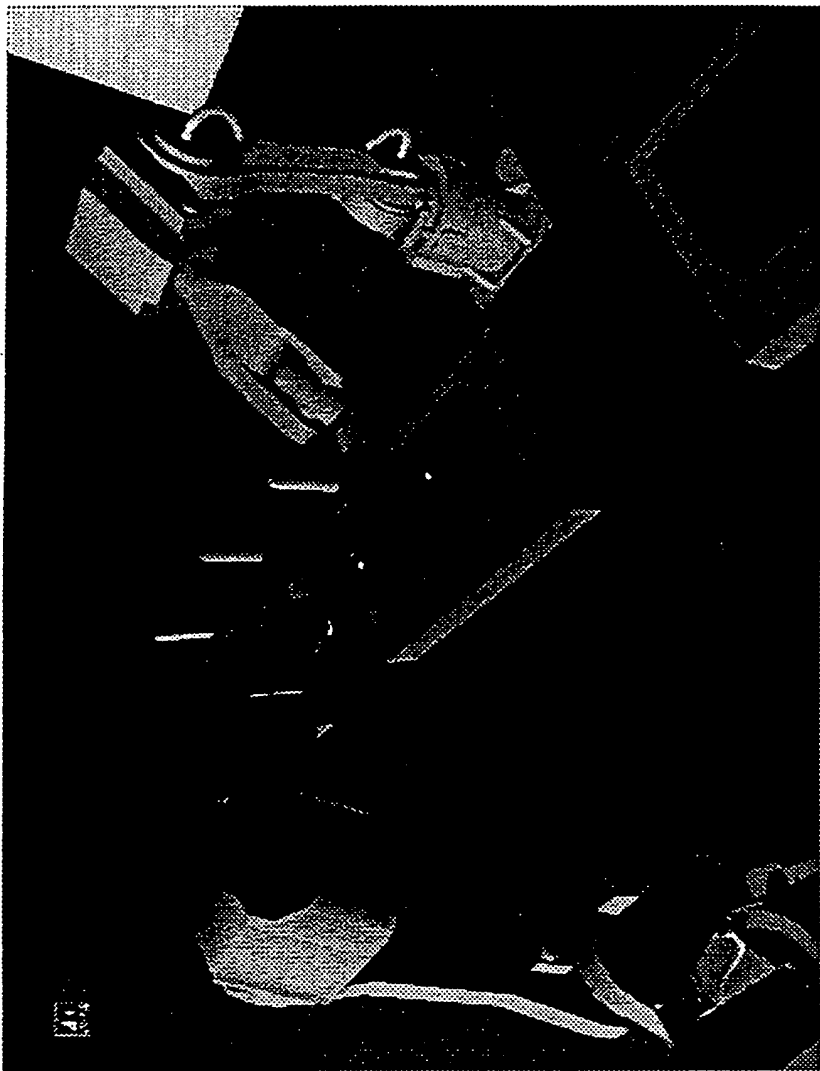


FIGURE 3

The diagram illustrates a manufacturing system architecture. At the center is a 3D illustration of a manufacturing cell, showing a robotic arm and a product. Surrounding this central cell are five key components, each in a box:

- Sensors** (top left)
- Controllers** (top right)
- Improved Lasers** (top center)
- Product Design** (bottom left)
- COMPUTERS Parallel Processing Models and CNC** (bottom center)

Arrows indicate the flow of information and control:

- From **Sensors** to **Controllers**.
- From **Controllers** to **Improved Lasers**.
- From **Improved Lasers** to the manufacturing cell.
- From the manufacturing cell to **Sensors**.
- From **Product Design** to the manufacturing cell.
- From the manufacturing cell to the **COMPUTERS** box.
- From the **COMPUTERS** box to the manufacturing cell.

A large, wavy arrow labeled **Information Superhighway with High Bandwidth** connects the **Sensors** and **Controllers** boxes, indicating a high-speed communication link.

### FIGURE 4

09017096-02200

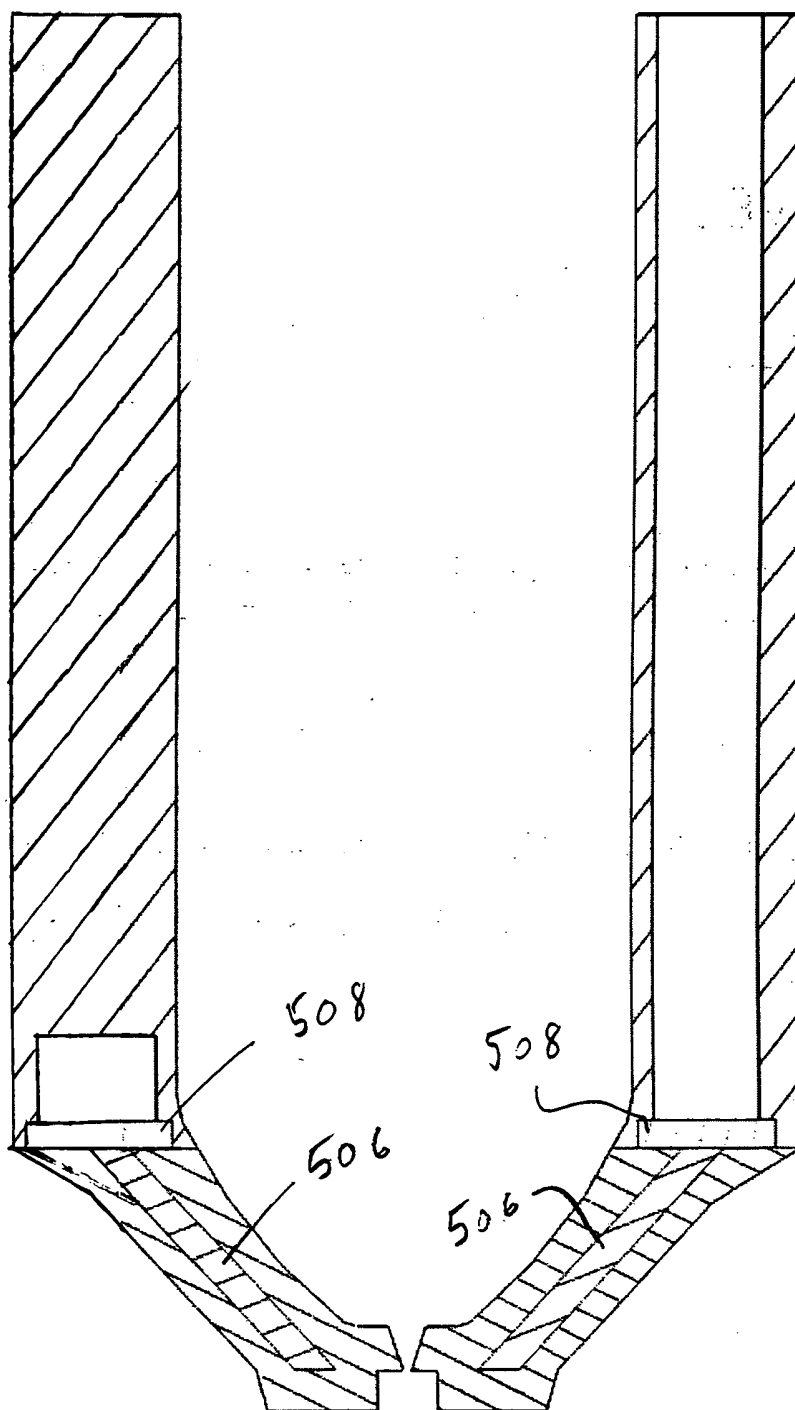


FIGURE 5A

09917096-0222002

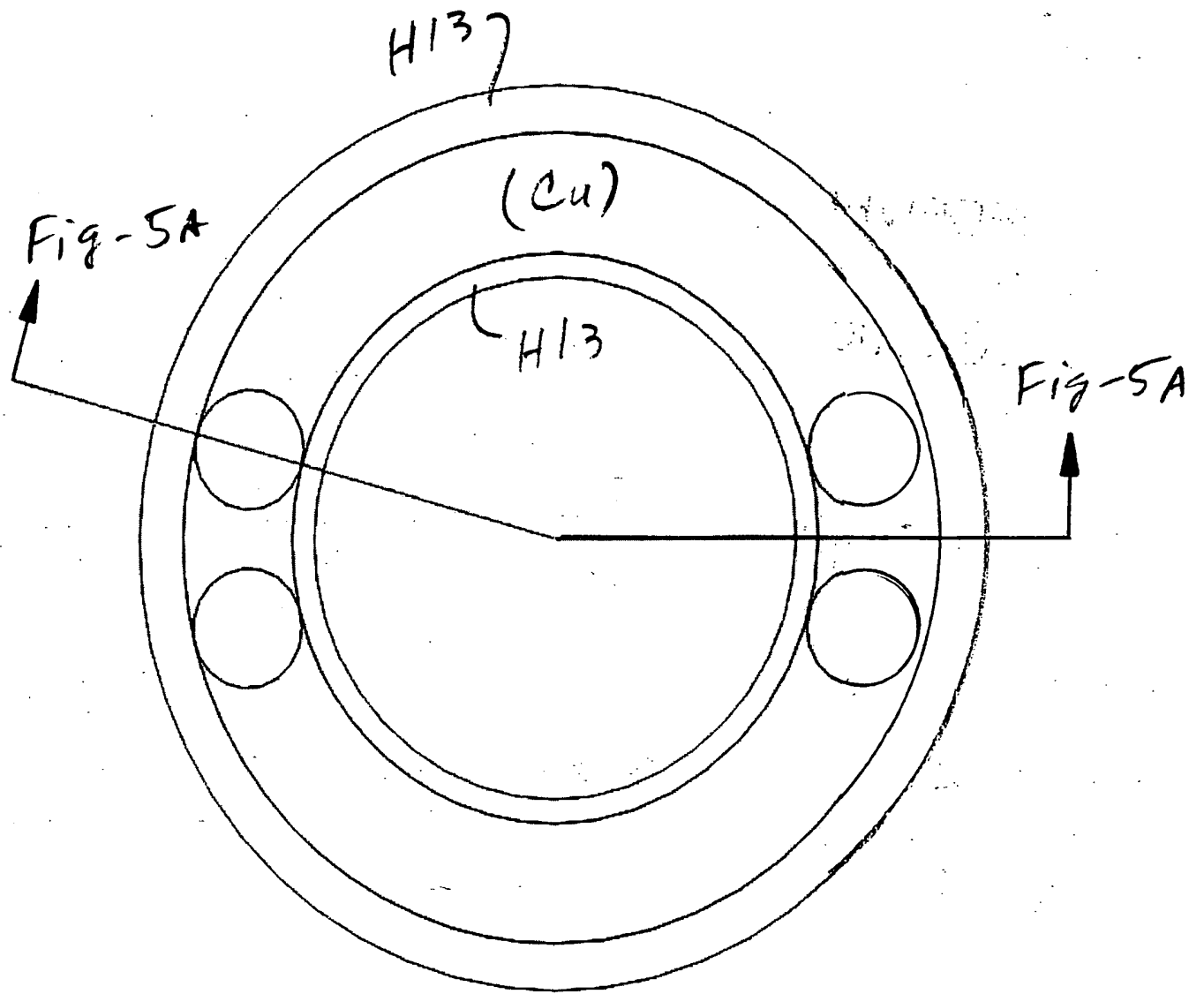


FIGURE 5B

Conventional  
Drilled Cooling  
Channels  
(DCC)

**FIGURE 6A**

Conformal  
Cooling  
Channels  
(CCC)

**FIGURE 6B**

Re-design of actual  
automotive fuse box cover  
to reduce molding cycle  
times using CoolMold  
Technology

09917096-022802

208220-960/F660

# Comparative Analysis - Core Heating Time [70 deg.F - 350 deg.F]

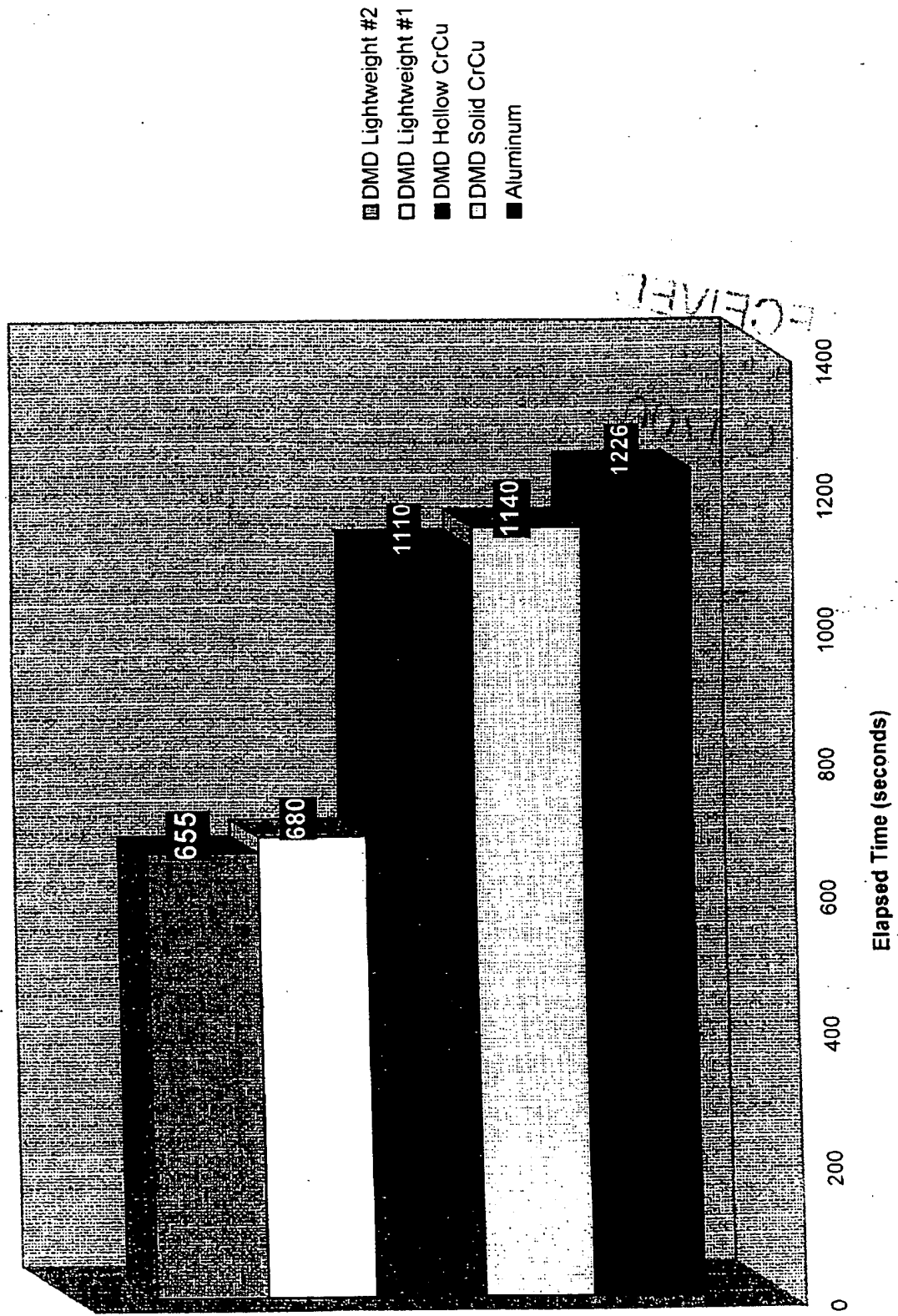
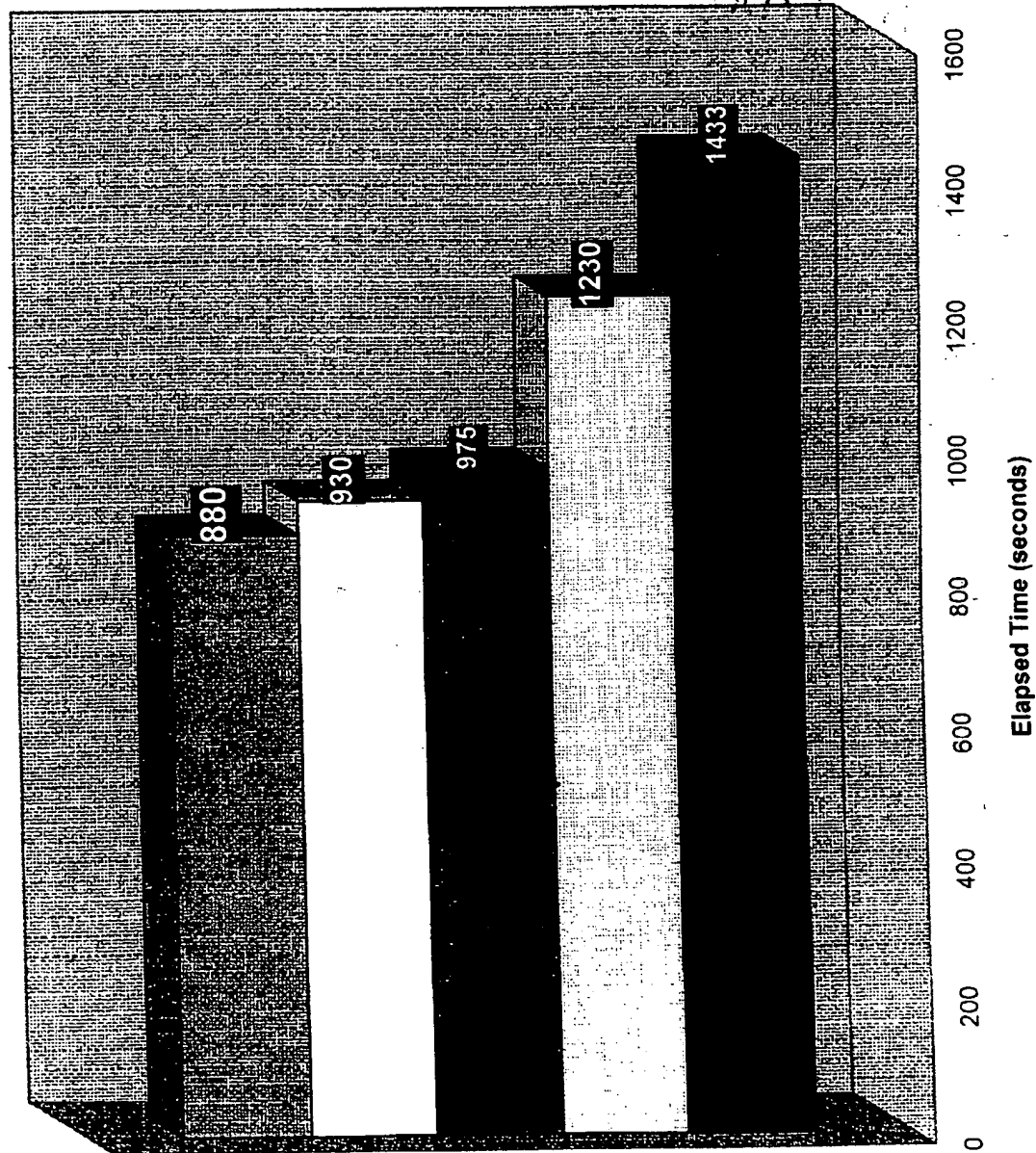


FIGURE 7



208220-960/1660

# Comparative Analysis - Cavity Heating Time [70 deg.F - 350 deg.F]



- DMD Lightweight #2
- DMD Lightweight #1
- DMD Hollow CrCu
- DMD Solid CrCu
- Aluminum

FIGURE 8

208220" 96041660

# TEST 2-1 [DMD Hollow vs. Aluminum]

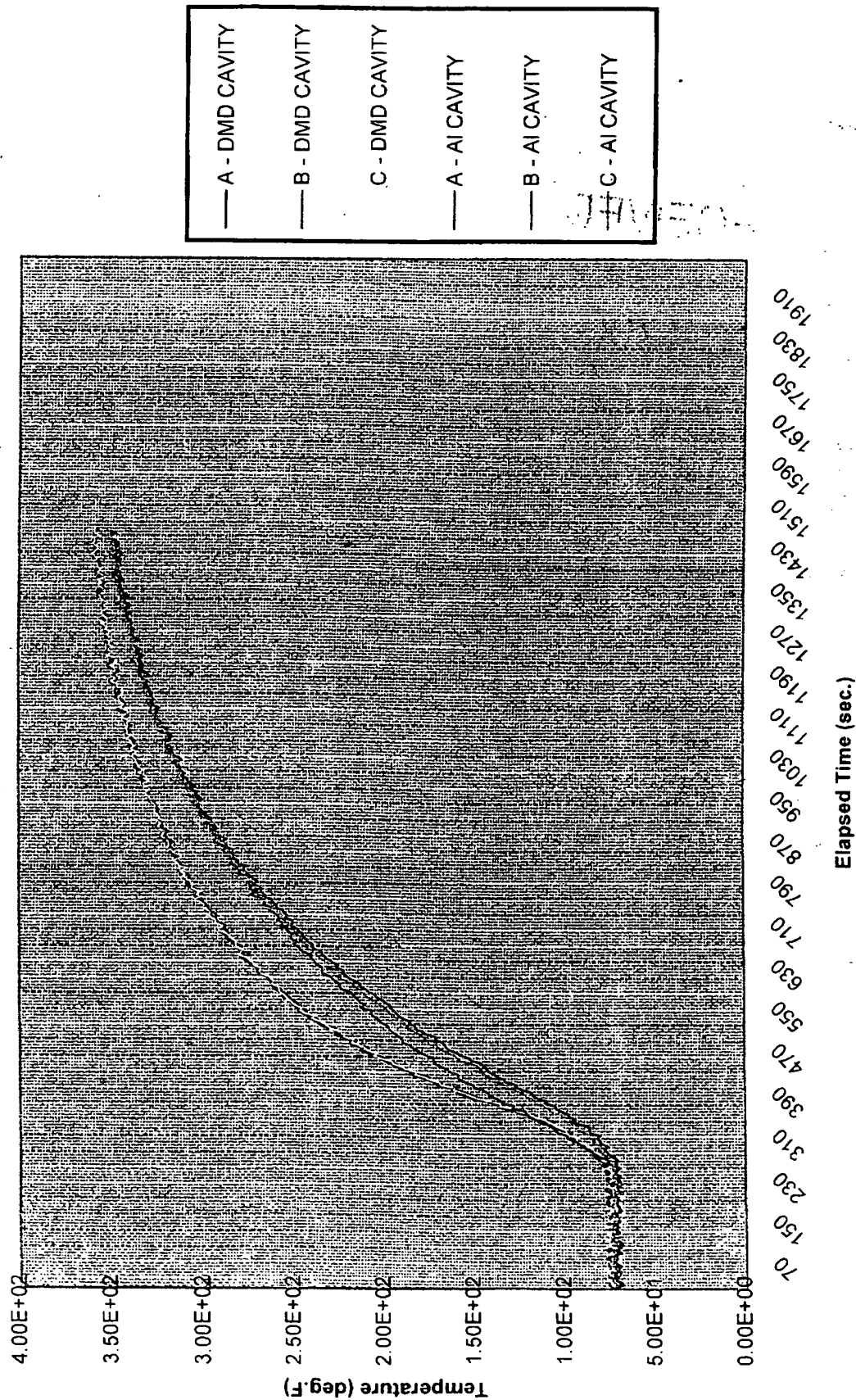


FIGURE 9

208220" 96021650

TEST 2-1 [DMD Hollow vs. Aluminum]

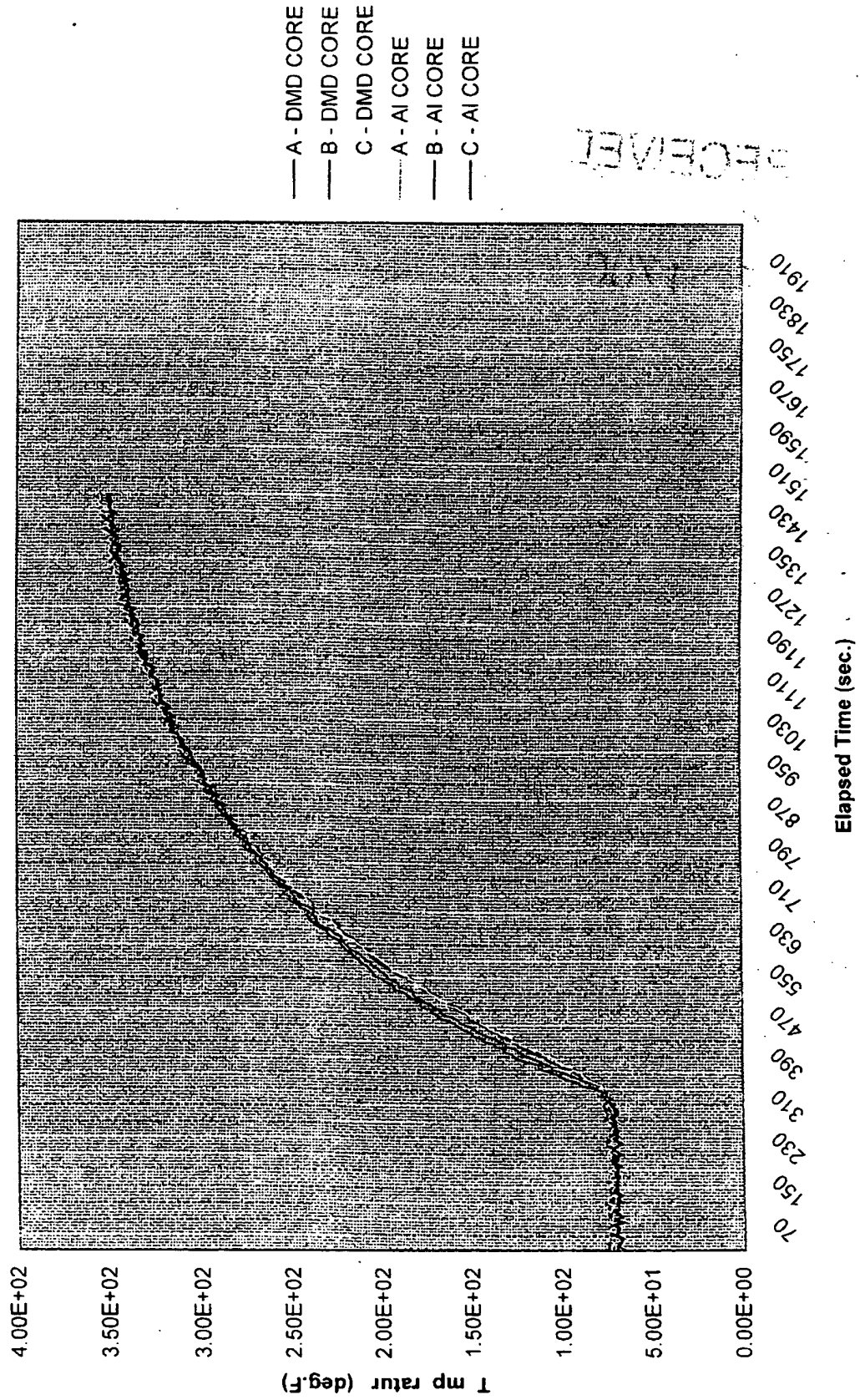


FIGURE 10

2082220-96021660

TEST 3-2 [DMD Light Wt.#1 vs. Aluminum]

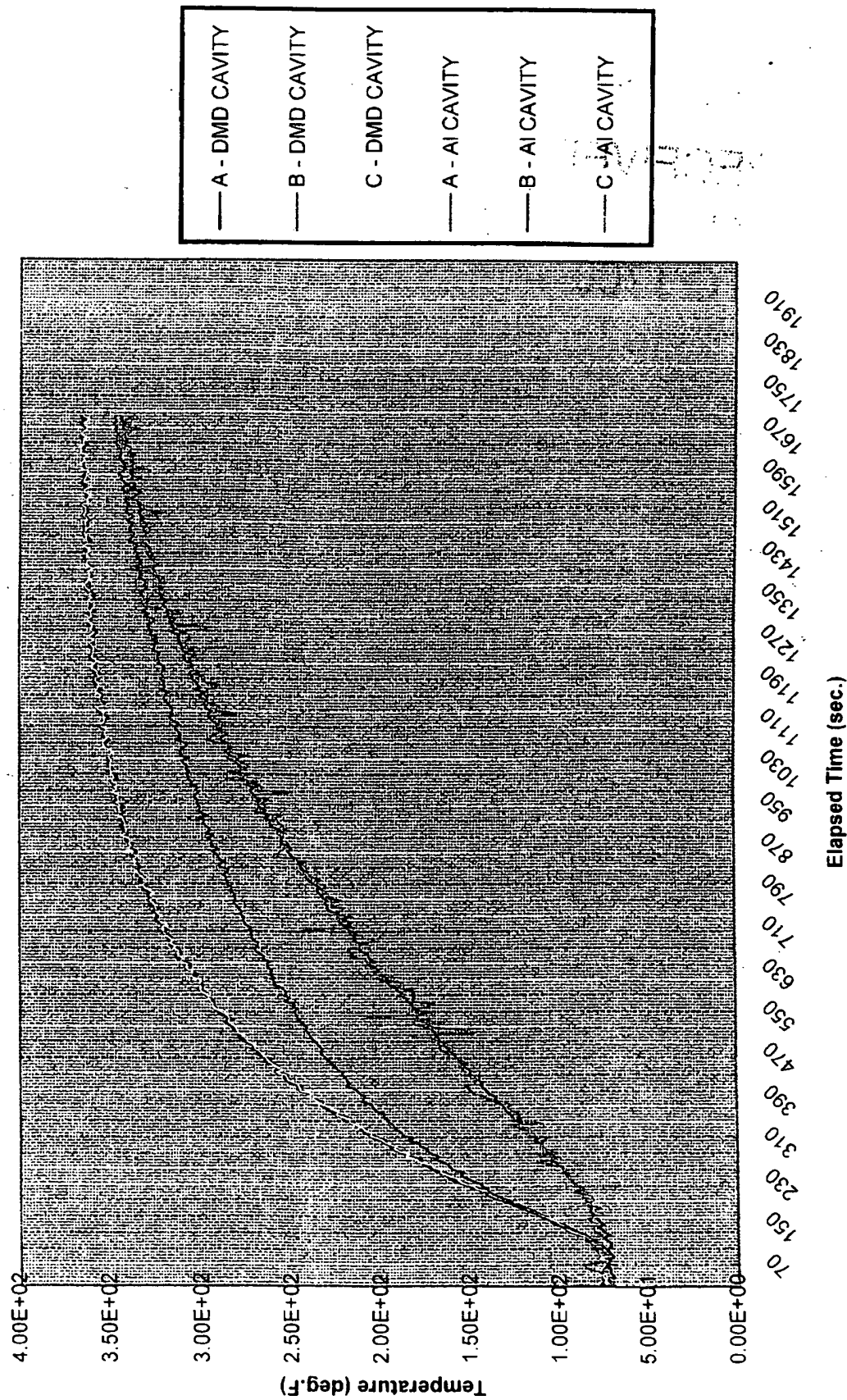


FIGURE 11

208220" 9604T660

# TEST 3-2 [DMD Light Wt.#1 vs. Aluminum]

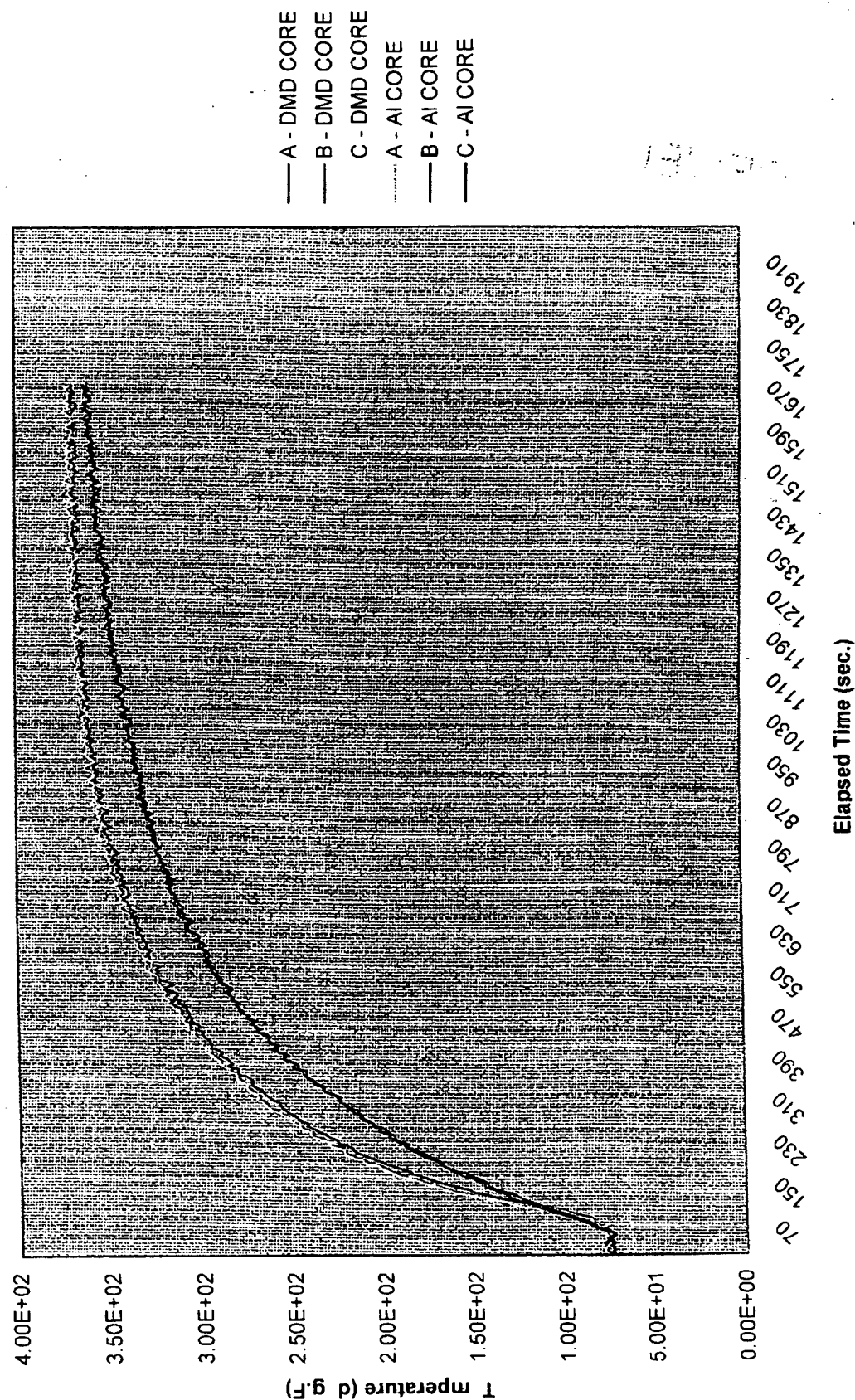


FIGURE 12



208220" 960/1660

TEST 4-2 [DMD Light Wt.#2 vs. Aluminum]

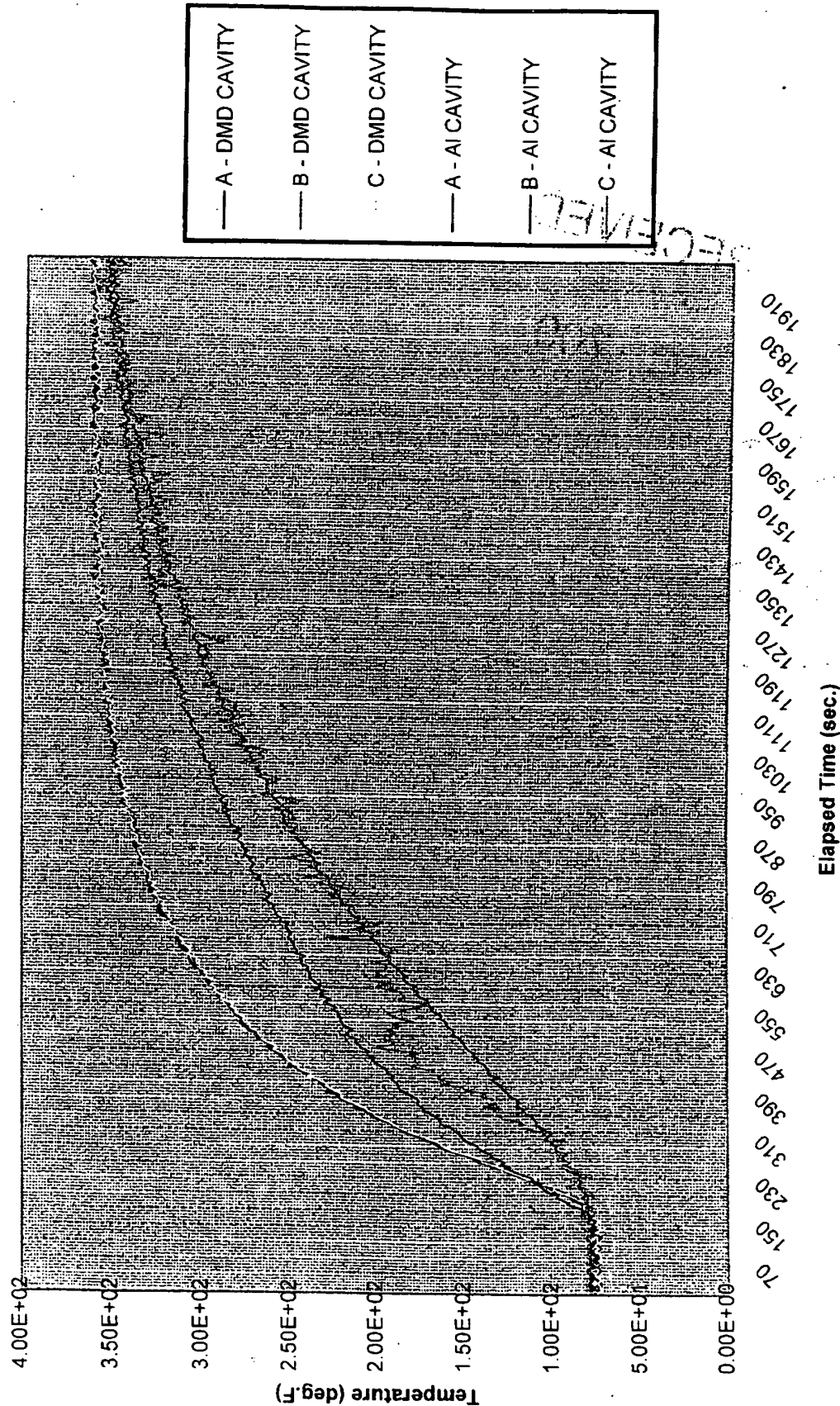


FIGURE 13

208220-9602T660

TEST 4-2 [DMD Light Wt.#2 vs. Aluminum]

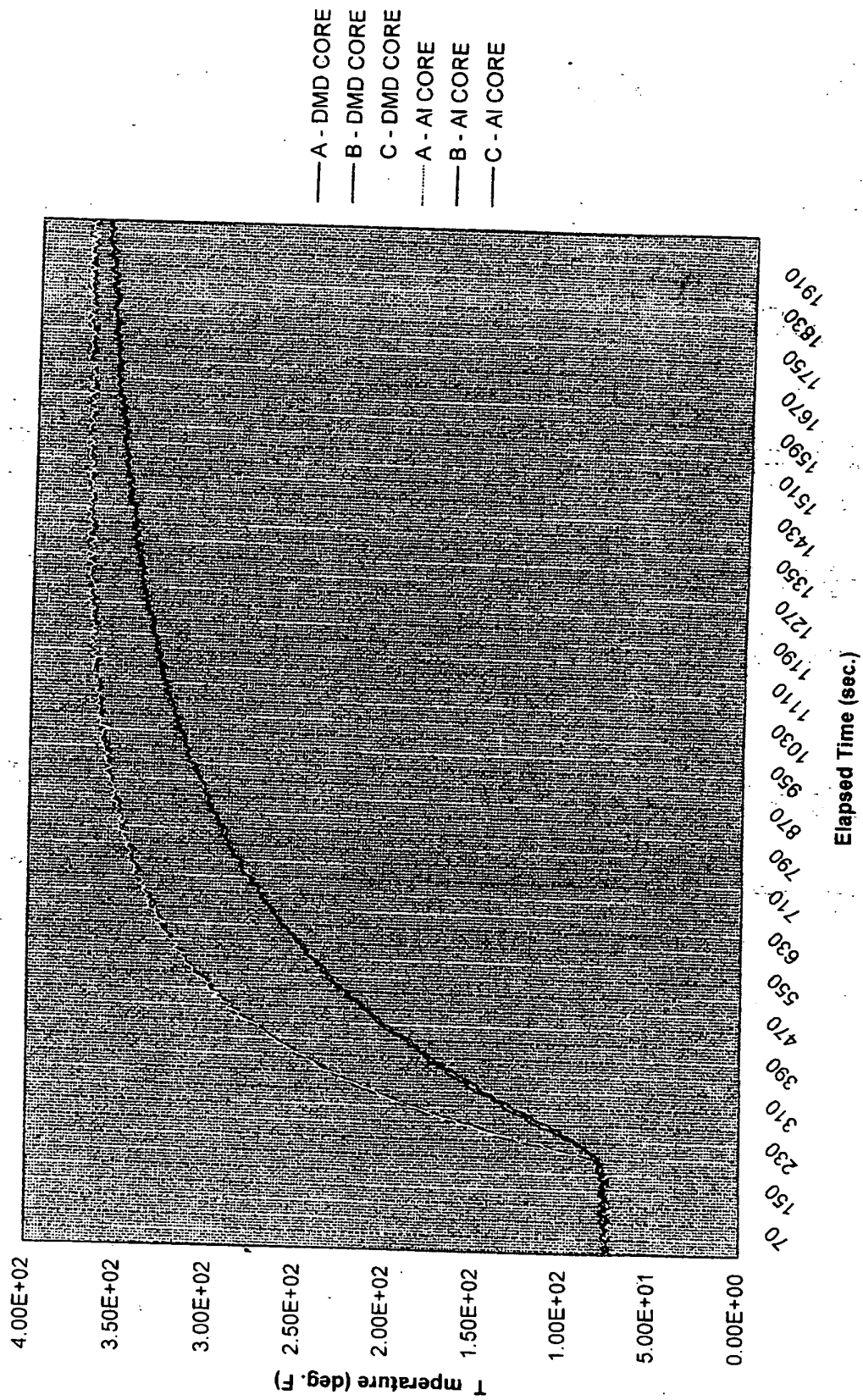


FIGURE 14